TOTAL COLIFORM RULE REVISION / DISTRIBUTION SYSTEM DATA COLLECTION

CONVENING REPORT AND PROCESS RECOMMENDATIONS

June 7, 2007

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Revised Draft Convening Report and Process Recommendations

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Submitted by RESOLVE
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EXECUTIVE SUMMARY

In Summer 2006, RESOLVE, was asked to assist EPA's Office of Groundwater and Drinking Water (EPA) in assessing stakeholder views on the Total Coliform Rule (TCR) and distribution system contamination issues and make recommendations regarding what kind of stakeholder dialogue about these issues would be useful and how to structure it. This report contains RESOLVE's findings and recommendations. These recommendations are based on input obtained through consultations with approximately 20 stakeholders via interviews, written comments, a technical workshop, and small group meetings from Summer, 2006 through Winter, 2007.

Stakeholders were interested in engaging in some form of stakeholder dialogue, but their views as to what kind of dialogue they wanted initially varied widely. In the Stage 2 Microbial/Disinfection ByProducts (M/DBP) Agreement-in-Principle negotiated by the M/DBP Federal Advisory Committee in 2000, EPA committed to initiating a stakeholder process for addressing "cross connection control and backflow prevention requirements and to consider additional distribution system requirements related to significant health risks." Parties differed as to whether they wanted to see this dialogue take place through a committee convened under the Federal Advisory Committee Act (FACA) or in some less formal mode. Environmentalists interviewed believe that such an advisory committee was implicit in the 2000 agreement, while representatives of drinking water companies, utilities, and state agencies were concerned that it would imply that a regulatory solution is needed to address distribution system contamination issues and they are not at this point persuaded that there is data to support that conclusion.

Earlier versions of this report offered six alternative approaches to structuring the dialogue that emerged from these consultations, along with conditions under which each might be appropriate, and benefits and challenges associated with each. We recommended that this stakeholder dialogue move forward in phases, with the first phase being a "Joint Data Review" to take place between January 2007, and February 2007. The intent was that, at the conclusion of this first phase, all parties could assess whether there is sufficient data available to support a consensus-building process on data that may need to be collected and/or reduction of public health risks associated with TCR revisions or other aspects of protecting drinking water quality while the water is in the distribution system. If so, they could also decide at that point what specific issues the consensus-building process should address.

EPA convened a 3-day technical workshop on January 30 – February 1, 2007 to share with stakeholders available information to support a potential consensus-building process. This revised draft convening report reflects feedback provided by workshop participants before, during, and after the event. There appears to be growing recognition that there is enough data to warrant looking more closely at the adequacy of existing protections, but not enough data to

accurately determine if the public health implications. Thus, the most meaningful progress is likely to take place if stakeholders take the time to move forward together in developing a shared understanding regarding whether there is truly a significant public health risk about which to be concerned; if so, the nature of that risk; and based on a shared understanding, what actions (regulatory or non-regulatory) might be appropriate to protect public health.

RESOLVE recommends proceeding with a focused consensus-building process under the FACA, seeking to develop an agreement-in-principle regarding: (a) the content of revisions to the TCR to improve implementation, while maintaining and / or enhancing public health protection; and (b) additional research and information that will guide EPA in assembling, analyzing, and interpreting the scientific data needed to accurately characterize public health risks associated with water quality while water is stored and / or traveling through the infrastructure of the nation's drinking water systems. More specific objectives are discussed in Section IV of this report. It may be helpful if stakeholders seek to include in the agreement-in-principle their shared views as to whether a follow-on effort would be helpful, after the completion of this Committee's charge (e.g., to re-convene once the data collection recommendations have been implemented to analyze the data obtained and explore whether further risk-reduction activities are needed).

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I. INTRODUCTION

EPA is required to review and revise, as appropriate, each national primary drinking water regulation at least once every six years, per the 1996 amendments to the Safe Drinking Water Act (SDWA) [Section 1412(b) (9)]. Accordingly, the Agency decided to revise the Total Coliform Rule (TCR) in July, 2003, believing that there is an opportunity to reduce the implementation burden while maintaining and possibly improving public health protection. This decision to revise the TCR was published as part of EPA's National Primary Drinking Water Regulation (NPDWR) Review, with related discussion in the Six-Year Review Notice of Intent, published in April, 2002.

The current TCR requires monitoring of water in distribution systems. Water quality in distribution systems is of significant national interest, because waterborne illness outbreaks related to distribution systems have been reported to be 28% of reported outbreaks from 1991-2002. EPA staff note that: (a) these outbreaks are known to be severely under-reported; (b) epidemiological studies suggest that endemic gastrointestinal disease rates from distribution system contamination may be significant; and (c) exposures to chemicals with chronic, subchronic and acute health effects have been found to originate in distribution systems as well.

The Stage 2 Microbial/Disinfection ByProducts (M/DBP) Federal Advisory Committee identified a range of health risks associated with distribution system contamination and recommended that, as part of EPA's Six-Year Review of the TCR, the Agency review and evaluate available data and research on those aspects of distribution systems that may create or pose risks to public health.

EPA asked RESOLVE to confer with a variety of between Summer 2006 and Winter 2007 to seek feedback on these issues and assess parties' interest in participating in a stakeholder process. (See Section II below for more information on the methods RESOLVE used to do so.) This convening report recommends next steps for such a stakeholder process, based on input received through these consultations.

II. METHODS

RESOLVE's convening report and our recommendations are based primarily on input obtained through:

- Consultations with representatives of several organizations who have participated in previous stakeholder dialogues that serve in some ways as a springboard for the dialogue currently being considered;

- Interviews with approximately 20 diverse stakeholders during Summer and Fall 2006; and
- Facilitation of a 3-day technical workshop on data available to support a potential stakeholder dialogue, which was held in late January / early February, 2007.

The interviews were conducted by Marci DuPraw, Senior Mediator; Abby Arnold, Senior Mediator; and Jennifer Peyser, Senior Facilitator. In these interviews and consultations, RESOLVE staff elicited input regarding a potential charge for a stakeholder group, priority issues, process suggestions, and key participants. (See Attachment 1 for a list of interviewees, and Attachment 2 for the interview context and questions, including the draft charge we initially conveyed to interviewees. Attachment 3 shows the slightly modified set of interview questions used in consulting with an expanded set of stakeholders.) RESOLVE also considered information obtained through reviewing technical documents and speaking with EPA staff.

RESOLVE sought to interview individuals representing a broad range of views on the TCR and distribution system issues. We worked with EPA staff to develop a list of individuals that would collectively provide input reflecting:

- The fullest possible range of views about the TCR and distribution system contamination;
- Input from stakeholders who were involved in previous processes that are seen as precursors to this issue (e.g., M/DBP negotiations and the Affordability Work Group); and
- Input from those who could help ensure the success of this stakeholder involvement initiative.

As we spoke with interviewees, we also asked them for additional suggestions of individuals with whom we should speak.

During the course of the interviews, it became apparent that a number of parties had concerns relevant to the design of a collaborative process (e.g., the extent to which EPA will commit to using forthcoming agreements as the basis for proposed rules, the extent to which EPA and others will protect such agreements from subsequent challenge, and the role of scientific information in consensus-based policy dialogues). Consequently, RESOLVE organized a small group meeting between EPA management and representatives of half a dozen organizations who had participated in previous stakeholder dialogues on related topics to enable them to talk through their concerns and how they would suggest moving forward with stakeholder dialogue on TCR and distribution system concerns. In addition to EPA, participating organizations included the American Water Works Association, the National Rural Water Association, the Association of State Drinking Water Administrators, the National Association of Water Companies, the Natural Resources Defense Council, the Association of Metropolitan Water Agencies, and Clean Water Action.

Following this meeting, RESOLVE assisted EPA in convening a 3-day technical workshop (January 30 – February 1, 2007) to jointly review with the drinking water community the information available to serve as the foundation for a potential consensus-building process. Input received before, during, and after this event helped to shape the recommendations in this report, in combination with input received through the interviews and other consultations.

III. SUMMARY OF FINDINGS

Stakeholders believe that issues associated with the TCR and distribution system water contamination are important, and raised a number of key topics and reasons for holding a dialogue. At the same time, there are a number of concerns about past processes and resource constraints that affect their views about moving forward with a new stakeholder dialogue. Further detail on these issues is provided below.

A. Whether to Convene A Dialogue

1. Holding a dialogue is important for a variety of reasons. Almost all those we spoke to expressed interest in having some form of stakeholder dialogue on TCR and distribution system issues. Some stakeholders pointed out that the M/DBP process resulted in an agreement to address distribution systems, particularly on cross-connection and backflow, and see a dialogue on these topics as critical. Some see a dialogue as an opportunity to encourage decision-making with the best possible science and to develop cost-effective regulations and/or guidance. Others see stakeholder processes as an opportunity to get EPA and different groups on the same page in terms of technical and regulatory issues. Distribution system challenges can be particularly important to states, who are responsible for implementation and currently lack a Federal regulatory "hammer" to take action to protect public health from distribution system contamination. There is also an interest in addressing public health and water security issues related to the fate and transport of contaminants that could potentially be purposefully introduced to the water supply. However, parties also noted that there are many competing needs for the resources that this stakeholder dialogue would take (e.g., helping systems comply with existing regulations), and that to the extent that this dialogue does go forward, it should focus on the issues at the nexus between: (a) matters presenting the most concern with respect to public health risks; and (b) matters where there is sufficient scientific information available to support meaningful dialogue.

2. Stakeholders had mixed views about whether to convene the dialogue under FACA. While interviewees expressed interest in representing their organizations in some form of dialogue, there were mixed views about whether a Federal Advisory Committee was the best route to take. Some stakeholders would be reluctant to participate in a dialogue that is not chartered under FACA. These individuals felt there was an implicit commitment in the Stage 2 M/DBP agreement that this would be a FACA–chartered process. They observed that, even though Federal Advisory Committees are resource-intensive, when they result in consensus, they can provide powerful momentum to carry the proposed solution through the rule-making process. In addition, it was noted that a Federal Advisory Committee allows stakeholders to bring diverse perspectives and information to bear and to generate new insights when working through questions "real time" as they come up. A common view was that, since EPA has decided to revise the TCR, a Federal Advisory Committee is a desirable way to involve stakeholders in that effort.

However, some expressed reluctance to pursue a FACA-chartered committee. A number of stakeholders share concerns about the resource requirements to run and participate in a formal Federal Advisory Committee. One party expressed concerns that Federal Advisory Committees may not be the best forum for stakeholders with minority viewpoints, while another was concerned that the systems most affected by the TCR are small and diffuse and, thus, would find it difficult to make their views known in a Federal Advisory Committee. This party expressed the perceptions that: (a) Federal Advisory Committees are exclusive and biased toward large systems and community systems, to the detriment of small and non-community systems, (b) a FACA-chartered process may limit EPA/state co-regulator discussions; and (c) agreements emerging from Federal Advisory Committees do not seem to allow for modification if compelling new information surfaces related to the subject agreement.

Other stakeholders shared their perspective that there is a lack of information or data needed to proceed in developing a regulatory solution at this time, though most thought there could be enough to proceed with cross-connection and backflow aspects. Finally, although no stakeholders questioned EPA's role with respect to TCR revisions, one stakeholder questioned EPA's authority to regulate distribution systems (as distinct from contaminants themselves).

3. Stakeholders raised trust-related issues that affect their views on future dialogues. Multiple interviewees raised questions about what they can expect of one another and of EPA in terms of negotiating strategies and honoring agreements. Recent actions that seem to have undermined agreements reached in past Federal Advisory Committees negative affect perspectives on participating in future stakeholder dialogues. Key reference points on many stakeholders' minds include:

    - Regulatory action following the minority recommendations of the Affordability Work Group rather than majority recommendations, and failed to offer the majority recommendation even as an option for consideration; and

    - Perceived lack of action to defend the Stage 2 M/DBP agreement when an Appropriations rider (the "Craig Amendment") was introduced to exempt small systems from enforcement – a point which contradicts the Stage 2 agreement.

    There are also fairly widespread concerns about some negotiating behaviors that have surfaced in other recent FACA-chartered processes (e.g., raising concerns late in the process; representatives delivering messages at the negotiating table that conflict with messages conveyed by others from the same organization away from the table, etc.). These behaviors has caused distrust and lead others to question the wisdom of investing time in future negotiations if such behavior is likely to occur again. Some worry whether an investment of time and resources in a new stakeholder process will yield durable agreements. These concerns were the impetus for the mid-August consultation between EPA management and "alumni" of several past

processes. If a consensus-building process is undertaken, it is apparent that close attention should be given to the operating protocols to ensure that all stakeholders feel they contain adequate protections for the integrity of the process and "handles" for stakeholders to use to surface concerns such as those above if they arise again. (See Sections III.C. and IV.C. for ways of doing this.)

B. Scope of Issues to Discuss

1. Most stakeholders want to discuss both TCR and distribution system issues. Most stakeholders care about both TCR and distribution system issues and want to ensure both are being addressed properly. While one person expressed the preference that EPA focus exclusively on TCR revisions, others noted that part of the Stage 2 M/DBP agreement was based on the understanding that this dialogue would include both TCR revisions and some consideration of distribution system issues. Most interviewees would be receptive to the approach of addressing TCR and distribution system issues on parallel tracks.

   Groups have different relative priorities for these two topics. All participants seemed to see the TCR as key to drinking water system operation and drinking water quality. State-based participants conveyed a strong message about proceeding with caution in making changes to a complex system that has been in play for some 20 years. Participants had varying ideas about how to improve the TCR, but there was a strong theme that a revised TCR should be:
   - Simple and flexible;
   - Focused on public health protection;
   - Easily communicated to the public.

2. TCR-related issues that seemed to have broad resonance as potential topics for stakeholder negotiation included:

   a. Whether to change total coliform sampling protocols (e.g., frequency, location, analytical methods, etc.) to allow for more targeted public health protection;

   b. Whether there are ways to enhance the consistency with which sampling requirements are interpreted and implemented.

   c. How to effectively notify the public and explain risks when samples come back positive;

   d. Whether there is a better way to achieve MCL goals and associated public notification objectives other than declaring MCL violations;

   e. Whether confirmed contamination should trigger corrective action, and if so what sort of action;

   f. Looking at the effectiveness of total coliform as an indicator of public health and how repeat sampling is working.

3. Most parties are open to discussing some aspect of distribution system issues, but have a strong desire to have a tight focus for the discussion since there is such a wide range of issues that fall under this heading. Also, many stakeholders question whether sufficient data exists to support constructive problem-solving on a number of these issues. The most promising dialogue on the distribution system issues is likely to be one that focuses on what scientific data is needed to adequately define perceived problems, who should collect that data, and how it will be analyzed and interpreted. The distribution system issues that seem most ripe for stakeholder discussion seem to be prevention of cross-connections and backflow. More specific topics related to these issues that seemed to resonate with a number of stakeholders included:

    a. What are states and utilities doing now to prevent cross-connections and backflow?
    b. What was the rationale for states and utilities to adopt the strategies they did?
    c. How well are these efforts working?
    d. What is the extent of the problem? (Go beyond anecdotes to collect aggregate data on frequency of exposure through various routes, health risks associated with exposure, etc.)
    e. What other strategies are available to reduce risk (regulatory and non-regulatory)?
    f. Can any of them be done in the short-term?

    Stakeholders expressed the view that both the TCR and distribution system issues will require a data collection component. For example, information on similar efforts being undertaken in Europe would be helpful, as well as information on other indicators besides total coliform (although EPA has indicated that the statute may not give much flexibility on whether or not total coliform is used as an indicator).

4. To the extent that there is enough data to support problem-solving negotiations on some distribution system issues, stakeholders expressed an interest in staying open to grappling with these challenges in multiple ways, not necessarily regulatory ones. Recommendations could also include guidance, best management practices, funding mechanisms for new strategies, and outreach and education, in addition to data collection and research. One party noted that the recently promulgated Ground Water Rule contains a requirement for states to conduct sanitary surveys, which include a distribution system component, and for the state to have the authority to correct and identify significant deficiencies; he suggested that attention be devoted to how best to support and enhance the distribution system components of these sanitary surveys.

C. How to Convene The Dialogue

1. Interviewees suggested the following principles should drive the stakeholder involvement process as a whole. The process should be informed and driven by top quality science. Stakeholders would like to understand the state of the science and be

comfortable that there is sufficient information available to be used in the negotiation process. They want credible experts to explain this science in lay terms. Stakeholders see their job as being to discuss the strengths and weaknesses of the available data, what is clear and what is not, and what missing information is critical. Related comments included:

a. Where a group starts the collaborative process depends on the state of the science.

b. Negotiations should be based on the best available information so the group does not negotiate to the lowest common denominator.

c. Experts should communicate information in a way that non-technical participants can understand.

d. A joint review of the data could be used to bring parties to agreement on experts, reviewers, and other technical advisors to be involved in the process (as occurred with the technical workshop EPA convened Jan. 30 – Feb.

e. A range of views should be welcome, and "standard" ground rules should apply (e.g., no one should be allowed to dominate the discussion).

f. Some participants are likely to need financial assistance with travel costs, or the option to participate by telephone rather than in-person.

2. Regarding the structure of initial technical workshop(s) to review available data, interviewees offered a number of suggestions, as listed below. (Note that EPA has since held a technical workshop, in January / February 2007, reflecting many of these suggestions)

a. Workshops should be open to the public at large, or at least to the broad "drinking water community."

b. Dates and locations should be announced approximately 3 months in advance to enable state participants to obtain travel authorization.

c. Organizations who are likely to participate in a potential consensus-building process on these issues should send the same individual who would represent them in such a consensus-building process to these technical workshops so that they will have a solid and shared foundation of information to build upon in a potential consensus-building process that might follow. The importance of this should be laid out in workshop invitations.

d. Organizations should be allowed to send multiple representatives to the technical workshop(s) to build a support system for the individuals who may participate in a consensus-building process related to some of these issues in the future.

e. The workshops should feature multiple speakers, none of whom should be allotted more than two hours.

f. The workshops should be designed with the needs of adult learners in mind (e.g., interactive exercises, facilitated discussion, site visits, and a variety of media, such as films and videotapes, as well as Power Point presentations). Presenters should not overwhelm the audience with an excessive number of slides.

g. For each major agenda topic (e.g., distribution system issues), have a speaker who can review data related to potential for drinking water contamination through various programmatic components, such as design and construction standards and operation and maintenance functions.

3. <u>With respect to the possibility of a formal consensus-building process on some set of these issues, interviewees suggested:</u>

a. There should be a high level of clarity for all participants at the very beginning of the process about roles of stakeholders and EPA, commitments to be made during and after the process, the form the agreement will take (e.g., agreement-in-principle, draft rule, etc), timelines for the negotiations, and mechanisms for enforcing an agreement, including dispute resolution processes. More specific comments included the following:

- The group needs to agree upfront on explicit operating protocols, describing how their discussions will be organized and conducted, and these should be signed by all parties.
- All parties have to commit to playing by the rules; parties should communicate as early as possible with other participants about any concerns they have about a particular issue under negotiation;
- Parties need to understand how agreement will be used (or not) by EPA.
- The agreement needs to be very clearly written to limit different interpretations of the same language.
- Parties need to understand what assurances they will have that any agreements reached through this negotiation will be implemented in accordance with their intent.
- Parties need a mechanism and agreement to reconvene if there is a significant dispute over implementation of agreements they may reach.

b. It is important for all participants to keep their constituencies informed about the status of the negotiations on a regular basis throughout the process. Furthermore, parties should inform other stakeholders about their constituencies' reaction to proposals. "Constituencies" include other leadership, staff, and key members of stakeholders' respective organizations who could affect the final agreement or its implementation. All constituencies should be made aware of the corrosive effect of excluding views or bringing in new concerns late in the negotiations.

c. It is important to have the right people at the table, including those who would have to implement any emergent agreements. Participants should include utilities, entities that might fund components of an anticipated agreement (e.g., USDA, CDC), regulators (e.g., US EPA, states, tribes), entities that issue relevant certifications (e.g., Association of Boards of Certification); environmentalists, and public health advocates. (See also Number 6 below, however, with respect to avoiding conflicts of interest.) Several recommended having some direct representation of small system operators at the table.

d. Several sectors may require multiple representatives to ensure all major perspectives in that sector have a voice at the table. More specifically:

- Utilities may need to have multiple representatives at the table to reflect relevant variations in the type of utility (e.g.: large, older urban systems; small rural systems, including both community and non-community small systems; both public and private systems, and dependency on ground water vs. surface water). States, RCAP, associations of utilities, and hotel/resort associations were all mentioned as potential proxies for non-community systems, which interviewees indicated are not organized enough to have a single spokesperson.

- Tribes also may need to have multiple representatives, reflecting their status as co-regulators and differences with respect to the types of utilities that they predominantly encompass. For example, some tribes have multiple small drinking water systems within the tribal community, while others have large systems spanning hundreds of miles. (The Three Affiliated Tribes have both.) Some are primarily dependent on ground water, and others on surface water. Some tribes have access to relatively abundant funds to ensure drinking water quality, while others have very few financial resources. It may be useful to have representatives from different geographic regions (e.g., the distribution system needs and concerns of native villages in the cold climate of Alaska may be quite different from those of native people in the arid southwest).

- Similarly, states may need to have multiple representatives reflecting differences in the kinds of utilities lying within their boundaries (e.g., urban / rural; dependence on ground water vs. surface water; states where it is the state that takes on the bulk of responsibility for ensuring TCR compliance, and others where the utilities do so; relative prevalence of non-community systems; etc). One interviewee pointed out, for example, that the six states in EPA Region 5 encompass 40-45% of the non-community water supply (generally ground water dependent) in the U.S. Michigan leads the way, with approximately 11,500 non-community systems. At the same time, one of those states (Minnesota) has a particularly high number of systems dependent on surface water.

e. Careful attention should be given to the balance of seats at the table for various sectors.

f. Parties who may have a conflict of interest (e.g., product manufacturers) should not be at the table.

g. EPA should have high level representative at the table (e.g., Office Director).

h. The process design should take into consideration the logic model that EPA is using to evaluate state programs. For example, in developing strategies for reducing potential risks associated with drinking water system water quality, seek strategies that address the related outcomes and goals in that logic model, such as "reducing waterborne illness associated with drinking water").

i. Consider using a problem-solving approach similar to the Hazard Analysis Critical Control Point (HACCP) process in the food industry, which focuses on identifying critical points in the system where system failure could occur, and remedying those.

j. Discussions should unfold via a combination of plenary and small group work.

k. The process should allow for sufficient time to clarify the issues, identify data gaps, do research, and make sense of the research results, and to allow participants to consult with their respective constituencies throughout. Consider phasing the negotiations, to enable participants to take on a "do-able" chunk at any one time. Work with the participants to determine what is do-able within a particular timeframe.

l. There should be an opportunity for public comment.

m. In terms of developing an agreement that tribes will support, it would not be realistic for EPA to look to one or a few tribal-affiliated participants to represent all tribes, nor to hope to get a consensus of the hundreds of tribes in the country, but it might be a good goal to work toward an agreement that would be endorsed through a resolution passed by a majority of tribes attending the National Congress of American Indians' mid-year convention in late spring or annual convention in the fall. Other tribal organizations and networks that might be helpful in these endeavors include the National Tribal Environmental Council, the National Tribal Science Council, the Regional Tribal Operations Committee in EPA Region 9, the Great Lakes Intertribal Council, and the Mni Sose Intertribal Water Rights Coalition.

n. If it is determined that a consensus-building process is appropriate for some or all of these issues, EPA should consider other approaches besides a Federal Advisory Committee, which some do not consider to be sufficiently inclusive, particularly when large numbers of stakeholders are not organized to have a single

spokesperson such as with non-community water systems, which make up a large portion of the TCR-regulated systems. Other models mentioned included:

- The approach being pursued by the Source Water Collaborative (characterized as multiple organizations jointly determining how to accomplish their shared goals, rather than advising a single decision-making agency on what it should do); and

- The approach used in developing the newly promulgated Ground Water Rule (characterized by an interviewee as entailing very broad stakeholder engagement through public forums in a range of geographic locations, as well as focused work in small work groups). This interviewee recommended using a combination of public meetings (with at least one in EPA Region 5, given the large concentration of non-community systems there), the internet, email, and state newsletters.

o. If a participant does not concur with the direction in which negotiations are unfolding, they should have the options to drop out of the process and/or to submit a minority report.

D. <u>Participants</u>

Stakeholders would like to see a diverse group at the table. More specifically:

1. *Multiple state representatives* would be useful because they are co-regulators and because different states have different issues, levels of resources, authorities, politics, and staff capabilities and time. It would also be useful to include an urban/rural mix and states with lots of non-community systems. Georgia, Texas, and Utah have been involved in earlier discussions on this. ASDWA may also be interested in participating directly at the table because this is a key issue for the organization.

2. *Water utility representatives* would provide distribution system experience and experience in how to keep such systems healthy during installation, renovation, and operation. Some or all of the following groups would be candidates for involvement: the American Water Works Association, the National Rural Water Association, the National Association of Regulatory Utility Commissioners, the National Association of State and Utility Consumer Advocates, the American Backflow Prevention Association, and the American Society of Sanitary Engineers. On-the-ground utility representatives would also provide a valuable perspective.
   a. There are challenges for small system representatives interested in participating, including time to travel and read large volumes of technical material. Suggestions for coping with these challenges ranged from “invite them in at a later stage” to “invite multiple small system representatives to the table.”

b. It would be helpful to have a variety of small system perspectives at the table, including small systems who get water from water treatment plants, those who get water from a ground water source, and those who purchase water from one of these two sources.
c. Large water system views are also important to understand. Interviewees suggested conferring with system operators in Washington, DC, New York City, and/or Las Vegas, NV to learn about "big system" issues.
d. Representatives of non-community systems should be included so they can remind the group of potential implications of any recommendations or actions on these systems.

3. *Private Sector*, including private plumbing entities such as heating and cooling companies;[1]

4. *Environmental interests* such as the Natural Resources Defense Council and Clean Water Action;

5. *Tribes* (see III.C.3.d. above for related discussion);

6. *Federal agencies*. Agencies mentioned in addition to US EPA included the Army Corps of Engineers, the Air Force, the Navy, and the U.S. Public Health Service/Center for Disease Control, including National Center for Infectious Diseases and the National Center for Environmental Health/Agency for Toxic Substances and Disease Registry. Both EPA's Cincinnati Lab and its headquarters' Office of Ground Water and Drinking Water were mentioned as important contributors.

7. *Health Community Representatives*, including representation from the medical, public health, and consumer advocacy communities. This encompasses state agency staff who work on distribution system contamination issues. For a list of suggested health experts and representatives, please see Attachment 6.

8. *Asset Management / Deteriorating Infrastructure Financing Agencies*, who can speak to the costs and process for dealing with infrastructure-related issues (e.g., Council of Infrastructure Financing Authorities).

E. Timing

Stakeholders generally believe that it will be difficult to address all the issues in the draft charge that was discussed during stakeholder interviews (see Attachment 2), in the timeframe EPA indicated it had available (1 – 1.5 years), and that there could be value in sequencing TCR and distribution system issues. When RESOLVE interviewers discussed EPA's proposed timeline with interviewees (1 – 1.5 years), they indicated this would be ambitious. They recommended starting with the topics for which there is the most data, on which it would be easiest to get agreement, and/or that would most rapidly reduce public health risks.

[1] (Note that this suggestion from some stakeholders contradicts other comments about avoiding seating parties with potential conflicts of interest at the table.)

They also offered the following general suggestions for dealing with the challenge inherent in that timeframe:

1. Consider parallel work on TCR revisions and distribution system issues, and within the latter, consider using subgroups.

2. Consider organizing in stages, beginning with a focus on technical issues.

3. Ask the group to start out by agreeing what issues need to be dealt with overall, developing their own schedule for when they can do what parts of it.

4. EPA's proposed timeframe for this effort (1 – 1.5 years) is feasible IF participants are working well together; otherwise, not.

F. Facilitation

Parties agree they need a facilitator for the process and noted a number of recommended qualities. Interviewees observed that:

1. A facilitator would help parties and EPA work through these differences and focus the group on interest-based negotiation.

2. A facilitator could also help ensure that stakeholders work through issues without getting sidetracked by helping the group envision the big picture.

3. The facilitator should be experienced and skilled at consensus-building, including one-on-one consultations. It would be helpful to have water sector experience, but a high level of technical knowledge is not essential.

G. Technical Resources and Considerations

Stakeholders offered numerous suggestions for data, reports, and proceedings that could inform the dialogue, as well as potential technical experts that could assist the group, including:

1. EPA white papers and the National Academy of Sciences' report on this subject;

2. Guidance manuals, plumbing codes, and sanitary surveys; and

3. Technical and health experts, such as consultants and technical staff of EPA and participating states.

Please see Attachment 6 for their specific suggestions.

IV. PROCESS RECOMMENDATIONS

A. Whether to Convene A Dialogue

Based on the sum total of input received during the convening process to date, RESOLVE recommends that EPA establish a Federal Advisory Committee with the goals of developing an agreement-in-principle regarding: (a) the content of revisions to the TCR to improve implementation, while maintaining and / or enhancing public health protection; and (b) additional research and information that will guide EPA in assembling, analyzing, and interpreting the scientific data needed to accurately characterize public health risks associated with water quality while water is stored and / or traveling through the infrastructure of the nation's drinking water systems.

While there were some concerns about aspects of a Federal Advisory Committee, EPA understands this structure to be legally required if the Agency wants to establish a group that will provide EPA with consensus recommendations. Stakeholders generally do want to provide EPA with consensus-based recommendations because they are seen as more likely to be implemented than individual input. Thus, RESOLVE believes that a FACA-chartered process is the best way to accommodate that prevailing interest. Moreover, RESOLVE believes that it is possible to shape the consensus-building process in a way that minimizes the likelihood of the risks that some stakeholders associate with Federal Advisory Committees (as discussed in Section III.B) occurring. See Section IV.C below for thoughts about how to convene the dialogue in a way that addresses these concerns.

B. Scope of Issues to Discuss

It is common practice for an Advisory Committee to discuss its proposed charge at its first meeting. A reasonable starting point for discussion regarding the objectives to include in a proposed charge might be that the Committee:

1. Provide advice on and recommendations on revisions to the Total Coliform Rule to improve implementation while maintaining or improving public health protection and distribution system water quality. The issues to be considered by the Committee include, but are not limited to: the TCR monitoring framework and sanitary survey provision, the definition of MCL violations and potential follow-up corrective actions, and communication of the public health significance of violations.

2. Provide advice and recommendations regarding what data should be collected, research conducted, and/or risk management strategies evaluated to better inform distribution system contaminant occurrence and associated public health risks in the distribution systems. This is intended to "initiate a process for addressing cross connection control and backflow prevention requirements and consider additional distribution system requirements related to significant health risks" called for by the Microbial Disinfection Byproducts Federal Advisory Committee. The issues that the TCRDS Advisory Committee may consider include but are not limited to: (1) evaluation of available data and research on aspects of

distribution systems that may create risks to public health and (2) data collection approaches (such as a data collection rule and/or additional research).

As part of their agreement-in-principle, it would probably be helpful if Federal Advisory Committee members were also invited to provide a consensus-based recommendation regarding appropriate steps to follow up on the results of this particular consensus-building process -- e.g., whether to proceed with a follow-on effort to negotiate the specific wording of the revised TCR, and/or to determine risk-reduction actions that may be needed regarding other aspects of protecting drinking water quality in the distribution system.

C. How to Structure the Dialogue

We suggest that Committee members negotiate mutually-acceptable operating protocols reflecting the following principles at the outset of their deliberations:

1. EPA should clearly convey how the group's recommendations will be used. (Options include a commitment upfront to use the Committee's anticipated agreement as the basis for the proposed rule, or a commitment upfront to consider input carefully but with the right reserved to use incorporate some of the recommendations into the proposed rule and not others; the former is more likely to build trust and commitment from other stakeholders, but the key thing is to be clear about what commitment is being given so that the stakeholders can decide whether to participate in that context.)

2. EPA should be a participant in the Committee negotiations, rather than solely a recipient of the group's advice.

3. In considering group composition, it would be beneficial to include multiple voices to represent small drinking water systems.

4. Operating protocols should be explicit about acceptable negotiating behavior, steps for discussing perceived violations, and related consequences.

5. It might be worth considering augmenting the core Committee deliberations with several public meetings held in states or regions where there is a large concentration of small, rural, and/or non-community water systems to ensure these stakeholders have sufficient opportunity to make their views known.

6. Each Committee member should keep their respective constituents well-informed about negotiations and bring their constituents' interests, concerns, and issues into the deliberations in a timely manner so that other Committee members have an opportunity to help incorporate address those concerns in draft work products. This sometimes takes the form of consultations with others within a representative's organization and sometimes consultations with other organizations in the same sector (e.g., other federal agencies providing input to EPA; EPA regional offices funneling input to EPA representatives at the table; a range of states providing input to the state representatives likely to be at the table; etc.).

7. When negotiating agreements, the group should also discuss assurances about how parties will act to support and enforce the agreement, including a mechanism for convening parties to discuss actions that appear to be inconsistent with agreements.

8. Parties also should consider structuring agreements to include a mechanism for updating the agreement if compelling new scientific information pertinent to the agreement becomes available.

9. It may be beneficial for Committee members with overlapping interests to caucus on some issues to augment the plenary and subcommittee negotiations (e.g., EPA/state co-regulator discussions).

10. If this FACA-chartered process is initiated and if it results in agreement-in-principle on a proposed rule or rules, past experience suggests that it could take an additional 2-3 years after the Committee reaches agreement to finalize the rule. It will be important that EPA keep Committee members and other interested parties informed during that period to help ensure the resulting rule sustains the support of those who participated in the Committee.

We suggest that, given the procedural concerns expressed by stakeholders, Committee members sign off on their commitment to abide by whatever set of protocols is ultimately agreed upon.

D. Participants

The Committee composition should include diverse representation of those who are significantly affected by the issues on the table, those who have decision-making responsibilities related to these issues, and those who could be key to implementing agreements about them. It should include, at a minimum, senior representatives of EPA, tribes, state agencies responsible for drinking water programs, utilities representing the diversity of system types, environmental groups, and public health interest groups.

The challenge, of course, is to meet this objective while keeping the Committee to a manageable size. Several principles can help achieve this objective:

- Every stakeholder cannot be at the table, but every stakeholder should feel that there is someone at the table who can speak to their needs and interests;
- Within a sector (e.g., federal government, environmentalists, etc.), the representative at the table can and should confer regularly with others in that sector to bring the range of views within the sector to the table;
- The core negotiations "at the table" can be augmented with regional public meetings to provide accessible opportunities for more stakeholders to express their views on these issues;
- Members of the public can comment at designated points during the Committee meetings, and on any proposed rules emerging from this effort.

There may be some organizations that have stakes in this discussion, but that also might have a conflict of interest as members. The input of such organizations can be obtained through inviting them to make certain presentations and / or to provide public comment.

E. Timing, Facilitation, and Technical Support

All concerned seem to be in agreement that it will be challenging, but possible, for a representative group of stakeholders to reach consensus on how to move forward in addressing these issues in 1 – 1.5 years. In working out the sequence in which various issues will be discussed by the Committee, it may be important to take into consideration the lead time needed for data collection on distribution system issues.The likelihood of success will be highest if: (a) the charge is quite focused and any changes to it are made by explicit agreement of all Committee members; (b) participants work well together; and (c) an expert facilitator and technical support team are available to help the group move expeditiously toward their goal, with discussions grounded in the best available science.

The success of this FACA-chartered process will probably require substantial technical support, along with facilitators able to handle highly technical negotiations, in order to accomplish its goals in the time available. It may be advisable to have a technical consultant and facilitator team coordinate closely in planning and conducting the primary Committee meetings. In addition, this Committee will probably need a Technical Working Group to answer questions posed by the plenary. The composition of the Technical Working Group (TWG) should generally mirror that of the plenary Committee to help ensure the credibility and broad acceptance of the TWG's work products.

V. CONCLUSION

In summary, based on the stakeholder consultations that RESOLVE has undertaken over the last year, RESOLVE recommends to the U.S. Environmental Protection Agency that it is timely to proceed with a formal stakeholder dialogue to develop an agreement-in-principle concerning revision of the Total Coliform Rule and on what information about distribution systems is needed to better understand and address the public health impact from the degradation of drinking water quality in distribution systems. We suggest that this be done in the form of a Federal Advisory Committee, and have suggested guidelines for how to structure the Committee's discussions. We have provided a recommended slate of participants under separate cover. RESOLVE would like to express its appreciation to the many stakeholders who have taken the time to provide their input and help think through the best way to proceed in addressing this important set of issues in times of limited resources and many important competing priorities. We hope that these recommendations will assist all concerned in meeting their shared interest in protecting the quality of our drinking water in a manner that is both wise and efficient.

June 7, 2007

Total Coliform Rule / Distribution System Data Collection Rule
Revised Draft Convening Report and Process Recommendations

Attachment 3
Interview Context and Convening Questions (Round 2)

Background

Drinking water distribution system contamination presents a potential public health risk that needs to be evaluated for protection of water reaching the tap. The Drinking Water program has primarily addressed contamination in sources and at the point of treatment. Water used for drinking receives a high level of treatment, but is subjected to many potential contamination opportunities as it subsequently travels through the distribution system through several mechanisms, including:

- Cross-connections and backflow;
- Deteriorating infrastructure;
- Corrosion; and
- Biofilms.

EPA is required to review and revise, as appropriate, each national primary drinking water regulation at least every six years, per the 1996 amendments to the Safe Drinking Water Act (SDWA). Accordingly, the Agency decided to revise the Total Coliform Rule (TCR) in July, 2003, believing that opportunities exist to reduce the implementation burden, while maintaining and enhancing public health protection.

In addition, the Stage 2 Microbial/Disinfection ByProducts (M/DBP) Federal Advisory Committee also recommended that EPA review and evaluate available data and research on those aspects of distribution systems that may create or pose risks to public health, including cross-connections and aging infrastructure.

EPA recognizes the twin drivers of the SDWA revisions requirement and M/DBP advisory committee recommendations and is engaged in addressing the contamination of the drinking water distribution system. The overall challenge for EPA is to assess risk in drinking water distribution systems and determine how to control those risks.

Process

To help in this effort, EPA is considering convening stakeholders for a series of meetings. We have talked to a number of stakeholders in the drinking water community to get their feedback on TCR/distribution system issues and process ideas. At this point, it looks like stakeholders may be interested in participating in a two-stage process, and we would like to get your feedback on these ideas.

The first stage would include a joint data review through a series of technical workshops to explore what data is available related to TCR / distribution system contamination risks, whether available data indicates that there are risks necessitating problem-solving efforts and if so, for which particular issues sufficient data exists to support problem-solving. This would also be an opportunity to identify further data collection and research needs. This stage is likely to consist of two to four 2-day workshops for the drinking water community as a whole to participate in this review. EPA would seek a broad range of input from participating individuals and organizations. The desired outcome of this stage is shared understanding of available data, sufficient to support individual decisions by each participating organization regarding initial steps that they could each take to begin to address the public health issues of concern (e.g., data collection, participation in a possible EPA-convened problem-solving process, etc).

This approach could serve as a springboard for a subsequent consensus-based problem-solving process, depending on whether the joint data review suggests that there is sufficient data to support this and stakeholders are amenable to participating in such a process.

Questions:

1. Are you/your organization involved with this issue (now, or in last few years)? In what way?

2. Would your group be interested in participating, if asked?

3. Does this approach (starting with technical workshops to assess the state of the science/data, followed by a decision about a possible consensus-based process) make sense to you?

4. What issues or questions are most important to discuss? What do you think other stakeholders will want to talk about?
   - Do you have suggestions about which specific topics it would be most helpful for workshops to cover?

5. Do you have suggestions about technical experts who would be good presenters at the workshops?

6. Do you have suggestions about background materials that would be helpful for participants to review in preparation for the workshops?

7. Do you have other suggestions about how to structure the workshops?

8. If the stakeholders agree that there is enough data to proceed with a consensus-based process, who must be “at the table”?

9. Do you have suggestions about others whom EPA should invite to the workshops?

10. Do you anticipate any obstacles to the success of this effort? If so, what ideas do you have about how to overcome them?

Wrap-up

11. Anything else we should know?

12. Anything you want us to keep confidential?

June 7, 2007

Total Coliform Rule Revision / Distribution System Data Collection Rule
Revised Draft Convening Report and Process Recommendations

Attachment 2
Interview Context and Convening Questions (Round 1)

Background

Drinking water distribution system contamination presents a potential public health risk that needs to be evaluated for protection of water reaching the tap. The Drinking Water program has primarily addressed contamination in sources and at the point of treatment. Water used for drinking receives a high level of treatment, but is subjected to many potential contamination opportunities as it subsequently travels through the distribution system through several mechanisms, including:

- Cross-connections and backflow;
- Deteriorating infrastructure;
- Corrosion; and
- Biofilms.

EPA is required to review and revise, as appropriate, each national primary drinking water regulation at least every six years, per the 1996 amendments to the Safe Drinking Water Act (SDWA). Accordingly, the Agency decided to revise the Total Coliform Rule (TCR) in July, 2003, believing that opportunities exist to reduce the implementation burden, while maintaining and enhancing public health protection.

In addition, the Stage 2 Microbial/Disinfection ByProducts (M/DBP) Federal Advisory Committee also recommended that EPA review and evaluate available data and research on those aspects of distribution systems that may create or pose risks to public health, including cross-connections and aging infrastructure.

EPA recognizes the twin drivers of the SDWA revisions requirement and M/DBP advisory committee recommendations and is engaged in addressing the contamination of the drinking water distribution system. The overall challenge for EPA is to assess risk in drinking water distribution systems and determine how to control those risks.

Process

To help in this effort, EPA is considering convening stakeholders for a series of meetings. The purpose of these meetings would be to bring the relevant expertise, views and interests to consider risks, identify control strategies, and foster support from the stakeholder community at large. More specifically, the proposed charge is likely to include

1. Jointly reviewing and evaluating available data on the nature and magnitude of risks associated with occurrence of contamination events in drinking water distribution systems by
    a. Obtaining feedback on risk assessment approach,

   b. Reviewing data and research,
   c. Evaluating the usefulness/appropriateness/completeness of data,
   d. Identifying data gaps and on-going research.
2. Based on the data, developing recommendations on how to address these risks, including:
   a. Management or operational strategies for controlling these risks, and
   b. What TCR changes would be helpful to ensure that risks from the distribution system contaminants are effectively assessed and controlled to protect public health.

EPA would like to finish the stakeholder process by November 2007 in order to complete a proposed TCR revision by 2008.

EPA has contracted with RESOLVE to develop recommendations on what kind of stakeholder consultation process would be most useful. We're interviewing 20-30 stakeholder representatives to elicit insights on which to base our recommendations. We'd like to interview you in this context, if you're willing. Ideally, we'd like to schedule an appointment for about an hour of your time over the phone, but could make it shorter if need be.

Questions:

1. Are you/your organization involved with this issue (now, or in last few years)? In what way?

2. Do you think this is a dialogue that is important to undertake, generally speaking, but also for your particular constituents (why or why not)?
   a. If so, is this the right time to have it (why or why not)?
   b. Would your group be interested in participating, if asked?
   c. What would your group want to achieve through this process (i.e., what is your group's interest with respect to this issue)?

3. Does the proposed charge make sense to you? Is there any part of it that you or your group could not "get behind"? Would you suggest any changes to it?

4. Who has to be at the table to achieve these outcomes? How do your interests relate to those of other parties?
   a. Do stakeholders in this arena work well together? (Do you have any suggestions for helping them do so – e.g., a half-day kick-off training on interest-based negotiation?)
   b. Who else should EPA consult and notify of the meetings besides those directly involved?
   c. Are there any "experts" that should be involved as a resource to the group?

5. What issues or questions are most important to discuss? What do you think other stakeholders will want to talk about?
    a. What data, reports, and workshop proceedings are available?
    b. Where are data gaps?
    c. Will you/others need background briefings? Workshops on technical issues? Or are written materials enough?

6. Do you have suggestions about how the stakeholder process should be structured?
    a. Are you familiar with collaborative processes? What have you seen that would be most useful and helpful? What least?
    b. Any ideas about mechanics of process, ground rules, size of group, representation of agencies and interests, making decisions?
    c. Would you suggest this process be focused on building "agreement" on recommendations?
    d. Do you have suggestions about what topics we'd need technical working groups to focus on?

7. Is the timeline for this charge feasible?
    a. How often should we meet?
    b. Are there any major initiatives that would complement or conflict with this effort? How should this process relate to those efforts?
    c. Are there lawsuits, proposed legislation, studies, negotiations, recent/pending events that could affect this process and members' ability/willingness to proceed?

8. Do you anticipate any obstacles to the success of this effort? If so, what ideas do you have about how to overcome them?

9. Given the process structure and goals, subject matter, and potential participants, do you believe a facilitator is needed? If so, what are the desired attributes of a facilitator, and do you have any particular candidates in mind?

Wrap-up

10. Is there anyone else whom you think it is critical that we talk with during this initial exploratory period?

11. Anything else we should know?

12. Anything you want us to keep confidential?

June 7, 2007

Total Coliform Rule Revision / Distribution System Data Collection Rule
Revised Draft Convening Report and Process Recommendations

Attachment 1
Stakeholders Interviewed for Convening Report

1. American Backflow Prevention Association, Rich Koenig
2. American Water Works Association, Alan Roberson and Steve Via
3. Association of Metropolitan Water Agencies, Diane VanDeHei & Erica Brown
4. Association of State Drinking Water Administrators, Darrell Osterhoudt
5. Center for Disease Control, Michael Beech and Sharon Roy
6. Clean Water Action, Paul Schwartz and Lynn Thorp
7. Rural Community Assistance Corp., Blanca Surgeon
8. International Association of Plumbing and Mechanical Officials, Stuart Asay
9. National Association of Water Companies, Peter Cook
10. National Governors' Association, Malcolm Woolf
11. National Tribal Environmental Council, Ron Thomson
12. Michigan Department of Environmental Quality, Rich Overmyer
13. Minnesota Department of Health, Gerald Smith
14. Monroe (Michigan) County Department of Health, Maureen Pfund, Rebecca Head, and Kiera Werstin
15. National Rural Water Association, Rob Johnson
16. Natural Resources Defense Council, Erik Olson
17. Three Affiliated Tribes (Mandan, Hidatsa, and Arikara Tribes), Laurie Alberts
18. University of Southern California Foundation for Cross-Connection and Hydraulic. Research, Paul Schwartz
19. US Army Corps of Engineers, Vince Hock
20. US EPA, Cynthia Dougherty, Tom Grubbs, Ephraim King
21. Environmental Council of the States, Kristen Dunne, Bill Ross, Steve Chester, Jim Cleland, and Richard Benzie

Total Coliform Rule Revision / Distribution System Data Collection Rule
Revised Draft Convening Report and Process Recommendations

Attachment 5

TOTAL COLIFORM RULE / DISTRIBUTION SYSTEM STAKEHOLDER TECHNICAL WORKSHOP

Tuesday, January 30 – Thursday, February 1, 2007
The Capital Hilton
1001 16th Street, NW
Washington, DC 20036

FINAL AGENDA

Meeting Objective: Review available data on potential distribution system contamination issues and TCR implementation problems to enable EPA and stakeholders to:

- Enhance their understanding of the nature of the problem; and
- Ensure a shared awareness of the data available to support potential problem-solving.

DAY 1

8:00 REGISTRATION / SIGN IN

8:30 WELCOME AND OPENING REMARKS

- ***Welcoming Remarks*** (15 minutes) – Cynthia Dougherty (EPA)
- ***Objectives, agenda, ground rules, and materials*** (10 minutes) - RESOLVE
- ***Introductions*** (10 minutes) – RESOLVE / All participants
- ***Background: Drivers for Revisions to the Total Coliform Rule and Consideration of Distribution System Requirements*** (10 minutes) – Pamela Barr (EPA)

9:15 CONSIDERATIONS FOR DECISION-MAKING ABOUT RISK

- Purpose: To frame the context of the workshop and gain insights into different stakeholders' perspectives on assessing information to support problem solving.
- Approach:
  - ***Presentation: EPA's Approach to Risk Management*** (15 minutes) – Jennifer McLain (EPA)
  - ***Panel*****:** Stakeholder perspectives on factors EPA needs to take into account in making risk management decisions (20 minutes)
    - Mae Wu (NRDC)
    - Alan Roberson (AWWA)

Discussion: Other perspectives from participants at table (40 minutes)

10:30 BREAK

10:45 PUBLIC HEALTH PERSPECTIVES ON DISTRIBUTION SYSTEMS

- Purpose: To provide an overview of information on potential public health risks posed by distribution system contamination
- Approach:
  - ***Presentation: Available Public Health Information and the Use of the Information in Estimating the Scope of Distribution System Problems*** (30 minutes) – Stig Regli (EPA)
  - ***Presentation: State and Local Perspectives on the Scope of Public Health Outcomes from Distribution System Problems*** (30 minutes) – Patti Fauver

Questions of clarification/ discussion (15 minutes)

12:00 LUNCH

1:30 DISTRIBUTION SYSTEM PHYSICAL INTEGRITY ISSUES: CROSS CONNECTIONS AND BACKFLOW

- Purpose: Review available information for characterizing backflow exposure and potential health risks; examine how available information and anticipated results from on-going research can be used to analyze and solve problems; and explore how States and systems have used available information to make cross-connection decisions in on-going programs.
- Approach (3 presentations):
  - ***Presentation: Overview of Available Information on Cross-Connections and Backflow*** (25 minutes) -- Paul Schwartz (USC)
  - ***Presentation: Use of Available Information on Cross-Connections and Backflow*** (35 minutes) – Kenneth Rotert (EPA)

Questions of clarification / discussion (60 minutes)

3:30 BREAK

3:45 DISTRIBUTION SYSTEM PHYSICAL INTEGRITY ISSUES: CROSS CONNECTIONS AND BACKFLOW *(continued)*

- ***Presentation: Use of Cross-Connections and Backflow Information in Support of Implementing a State Program*** (20 minutes) – Simon Tung (Washington Department of Health)

Questions of clarification / discussion (30 minutes)

4:35 PUBLIC COMMENT OPPORTUNITY

5:15 CLOSING COMMENTS

5:30 ADJOURN

DAY 2

8:00 REGISTRATION / SIGN IN

8:30 WELCOME / AGENDA REVIEW – Marci DuPraw (RESOLVE)

8:45 OTHER DISTRIBUTION SYSTEM PHYSICAL INTEGRITY ISSUES: INTRUSION, CONTAMINATION DURING MAIN REPAIR, AND STORAGE VESSEL INTEGRITY

- Purpose: Review available information for characterizing exposure and potential health risks resulting from distribution system integrity problems of intrusion, contamination during main repair and storage vessel integrity; examine how available information and anticipated results from on-going research can be used to analyze and solve problems; and explore how States and systems have used available information to make decisions about managing risk of exposure through these pathways.

- Approach (2 presentations):
  - ***Presentation: Overview of Available Information on Some Distribution System Integrity Problems and the Potential Use of the Data*** (45 minutes, -- Melinda Friedman (HDR)

Questions of clarification / discussion (30 minutes)

10:00 BREAK

10:15 OTHER DISTRIBUTION SYSTEM PHYSICAL INTEGRITY ISSUES *(cont'd)*

- ***Presentation: Use of Available Information on Intrusion to Characterize Distribution System Problems*** (45 minutes) – Mark LeChevallier (American Water)

Questions of clarification / discussion (30 minutes)

11:30 LUNCH

1:00 WATER QUALITY IN THE DISTRIBUTION SYSTEM

- Purpose: Review available information for characterizing exposure and potential health risks resulting from problems associated with growth and release of distribution system biofilms; examine how available information can be used to inform the analysis of the problem for considering problem-solving opportunities.

1:00 WATER QUALITY IN THE DISTRIBUTION SYSTEM (Continued)

- Approach (3 presentations):
  - ***Presentation: Overview of Available Information on Biofilm Microbiology, Growth and Release*** (30 minutes) -- Anne Camper (Montana State University)
  - ***Presentation: Microbes of Potential Concern in Distribution System Biofilms*** (30 minutes) – Kellogg Schwab (Johns Hopkins University)
  - ***Presentation: Use of Data to Inform Risk Characterization and Management in Addressing Biofilm Problems*** (30 minutes) – Nick Ashbolt (EPA)

  Questions of clarification / discussion (30 minutes)

3:00 BREAK

3:15 OBJECTIVES OF TCR AND ITS INDICATORS

- Purpose: Describe the objectives of the TCR, the problems that the TCR is intended to address, related indicators, and how those indicators meet TCR objectives.

- Approach (3 presentations):
  - ***Presentation: EPA's Perspective on the Purpose and Limitations of TCR Monitoring*** (20 minutes) – Yu-Ting Guilaran (EPA)
  - ***Presentation: State Perspective*** (20 minutes) – Beth Messer (Ohio EPA)
  - ***Presentation: Industry Perspective*** (20 minutes) – Vanessa Speight (Malcolm Pirnie)

  Questions of clarification / discussion (45 minutes)

5:00 PUBLIC COMMENT OPPORTUNITY

5:15 CLOSING COMMENTS

5:30 ADJOURN

DAY 3

8:00 REGISTRATION / SIGN IN

8:15 WELCOME / AGENDA REVIEW -- Marci DuPraw (RESOLVE)

8:30 ISSUES WITH CURRENT TCR

- Purpose: Explain the State-level criteria for determining monitoring locations, timing, frequencies, and numbers; discuss different perspectives on TCR implementation issues

8:30 ISSUES WITH CURRENT TCR (Continued)

- Approach (3 presentations):
  - ***Presentation: EPA's Perspective on TCR Implementation Issues*** (15 minutes) – Kevin Reilly (EPA)
  - ***Presentation: State Perspective on TCR Implementation Issues*** (15 minutes) – Rich Haberman (California Department of Health Services)
  - ***Presentation: Small Utility Perspective on TCR Implementation Issues*** (15 minutes) – Paul Whittemore (NRWA)

  Questions of clarification / discussion (30 minutes)

9:45 BREAK

10:00 TCR COMPLIANCE ANALYSIS

- Purpose: Compare various sources of TCR compliance information and discuss what the compliance data can and cannot tell us.
- Approach (1 presentation with panel discussion):
  - ***Presentation: Overview of TCR Compliance Information*** (45 minutes) – Stig Regli (EPA)
  - ***Panel Discussion: Perspectives on What the Available TCR Compliance Information Tells Us*** (45 minutes)
    - Rich Haberman (California Department of Health Services) (5 minutes)
    - Chris Owen (Tampa Bay Water) (5 minutes)
    - David Baird (NRWA) (5 minutes)
    - Ongoing Panel Discussion: Haberman, Owen, Baird, Stig Regli (EPA HQ), Kevin Reilly (EPA Region 1) (30 minutes)

  Questions of clarification / discussion (45 minutes)

12:15 LUNCH

1:45 CURRENT USE OF DISTRIBUTION SYSTEM TOOLS FOR REDUCING DISTRIBUTION SYSTEM EXPOSURES AND TOTAL COLIFORM OCCURRENCE

- Purpose: Review strategies system operators are currently using to minimize risk and maintain TCR compliance.
- Approach:
  - ***Presentation: Overview of Current Distribution System Risk Minimization Techniques*** (45 minutes) – Gregg Kirmeyer (HDR)

Questions of clarification / discussion (30 minutes)

3:00 BREAK

3:15 PUBLIC COMMENT OPPORTUNITY

3:45 CLOSING COMMENTS (EPA)

4:00 ADJOURN